

**Remarks / Arguments**

Reconsideration of the present invention in view of the above amendments and the following remarks is respectfully requested.

Claims 1-31 are pending and stand rejected. Claims 1-30 are canceled herein.

Claim 31 is amended herein. Claim 31 is being amended at the present time to clarify the subject matter already presented and correct minor typographical and clerical errors. Support for the amendments in claim 31 is provided, for example, in paragraph [0036], [0081] – [0083], and Figures 7a through 7c.

New claims 32-51 have been added herein. Claims 32-51 are being presented at this time to more completely cover a particular aspect of Applicants' invention. Further, it is submitted that new claims 32-51 raise no new issues and do not require the Examiner to conduct an additional search, since the claims merely clarify the subject matter already presented. Support for claims 32-51 are found, for example, in original claims 2-10, 14-21, 25, and 27-30. Applicants respectfully request that the Examiner enter the above new claims.

Claims 24-26 and 28-29; 24 and 26-30; 24 and 26-20 are rejected under 35 U.S.C. §102(b) as allegedly being anticipated by the references U. S. Pat. No. 6,211,035 ("Moise et al."), "Growth of Dielectric HfO<sub>2</sub>/Ta<sub>2</sub>O<sub>5</sub> Thin Film Nanolaminate Capacitors by Atomic Layer Epitaxy", T. Kannianien et al., Electrochemical Society Proceedings, Vol. 97-31, pp. 36-26 (1998) ("Kannianien et al."), and U. S. Publ. App. No. 2003/0170986 ("Nallan et al."), respectively. These claims have been canceled herein. Therefore, withdrawal of the §102(b) rejections of these claims is respectfully requested.

Claims 1-2, 4-5, 8-9, 11-15, 17, 19-23; 24-26 and 28-29; 1-5, 8-9, 13-15, 17, 19-21, 24, and 26-30; 1-4, 6, 8, 10, 13-14, 16-17, 19-21, and 24-30 are rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over the references Moise et al.; U. S. Pat. No. 4,030,967 ("Ingrey et al."); U. S. Pat. No. 6,613,695 ("Pomarede et al.") in view of Nallan et al.; and Pomarede et al. in view of Kannianien et al., respectively. These claims have been canceled herein. Therefore, withdrawal of the §103(a) rejections of these claims is respectfully requested.

Claims 1-10, 13-21, and 24-30 were provisionally rejected under 35 U.S.C. §101 as claiming the same invention as that of claims 1-26 of co-pending Application No. 10/410,803.

These claims have been canceled herein. Therefore, withdrawal of the provisional double patenting rejection of these claims is respectfully requested.

Applicants respectfully traverse the §103(a) rejection of claim 31 in view of the Moise et al. as applied in paragraph 2 of the Office Action because the Examiner has failed to establish a *prima facie* case of obviousness. The Examiner alleges that it would have been "obvious to employ any of a variety of different process parameters in the etching process taught above including those which are specifically claimed by the Applicant". While the Examiner fails to particularly point out how claim 31 is rendered obvious by Moise, the standard that the Examiner employs to determine obviousness under § 103 should not be "obvious to try". "Obvious to try" is an improper basis for a § 103 rejection when there is no suggestion or expressed expectation of success in the prior art that would have led one to perform the experimentation in the first place. See, e.g., *In re Clinton*, 188 USPQ 365, 367 (CCPA 1976); *In re Tomlinson*, 150 USPQ 623, 626 (CCPA 1966). The proper standard to apply to establish obviousness is that there must be some suggestion or teaching in the reference itself that would have lead one of ordinary skill in the art to produce the claimed invention and that there is a reasonable expectation of success in producing the claimed invention.

Moise et al. fails to suggest or teach, nor provides a reasonable expectation of success, in producing the method described in Applicants' claim 31. In this connection, Moise et al. teaches a selective, anisotropic etching process to remove certain high dielectric constant para-electrics from a substrate. Moise et al. fails to suggest or teach, for example, "cleaning a substance from a reactor surface" as required in Applicants' claim 31. In fact, the method described in Moise et al. may accomplish just the opposite. During the etching process described in Moise et al., by-products of the etching process may accumulate on the reactor walls and other surfaces thereby adding –rather than removing- substances to the reactor surfaces.

Further, Moise et al. fails to suggest or teach, *inter alia*, "a reactive agent comprising at least one fluorine-containing compound and at least one halogen-containing compound selected from a chlorine-containing compound, a bromine-containing compound, or a iodine-containing compound wherein the amount of fluorine-containing compound **is less than 50% by volume** of the amount of the halogen-containing compound" as required in Applicants' claim 31. Rather, Moise et al. teaches selective etch chemistries containing chlorine-containing compounds and fluorine-containing compounds for removing PZT of different

compositions and doping, sidewall insulating diffusion barrier ( $\text{Al}_2\text{O}_3$ ,  $\text{AlN}$ , etc.), or ferroelectric materials (e.g., SBT, BST) wherein the amount of fluorine-containing compound relative to the amount of reactive agent or chlorine-containing compound is **50% by volume or greater** (see Moise et al. at Table I which summarizes stack etch at Step 4, col. 9-10; col. 12, lines 33-45; Table III col. 16-col. 17 at Step 2; Table IV col. 17-18 at Step 4; Table V, col. 19-20, lines 4 and 7). Specific examples of these etch chemistries "include a  $\text{Cl}_2/\text{CF}_4/\text{Ar}$  mixture of the ratio 10/25/50 sccm or 25/25/5 sccm or a  $\text{Cl}_2/\text{O}_2/\text{CF}_4/\text{Ar}$  mixture of the ratio 10/20/25/50 sccm" (see *id.* at col. 12, lines 34-36). Thus, there is clearly no teaching in Moise et al. that would lead one of ordinary skill in the art to clean a substance from a reactor surface using a reactive agent comprising at least one fluorine-containing compound and at least one halogen-containing compound selected from a chlorine-containing compound, a bromine-containing compound, or a iodine-containing compound wherein the amount of fluorine-containing compound **is less than 50% by volume** of the amount of the halogen-containing compound. Accordingly, reconsideration and withdrawal of the §103 rejections of claim 31 over Moise et al. is respectfully requested.

#### SUMMARY

For at least the reasons set forth above, it is respectfully submitted that the above-identified application is in condition for allowance. Favorable reconsideration and prompt allowance of the claims are respectfully requested.

Should the Examiner believe that anything further is desirable in order to place the application in even better condition for allowance, the Examiner is invited to contact Applicants' undersigned Attorney at the telephone number listed below.

Respectfully submitted,



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attachments: Petition for a Two Month Extension of Time  
PTO Form SB/22